

THE OFFICE OF REGULATORY STAFF
DIRECT TESTIMONY AND EXHIBITS
OF
MICHAEL L. SEAMAN-HUYNH
AUGUST 13, 2009



DOCKET NO. 2009-3-E

**Annual Review of Base Rates for Fuel Costs
of Duke Energy Carolinas, LLC**

DIRECT TESTIMONY OF
MICHAEL L. SEAMAN-HUYNH
FOR
THE OFFICE OF REGULATORY STAFF
DOCKET NO. 2009-3-E
IN RE: ANNUAL REVIEW OF BASE RATES FOR FUEL COSTS OF
DUKE ENERGY CAROLINAS, LLC

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND OCCUPATION.

A. My name is Michael Seaman-Huynh. My business address is 1401 Main Street, Suite 900, Columbia, South Carolina 29201. I am employed by the State of South Carolina as an Electric Utilities Specialist in the Electric Department for the Office of Regulatory Staff ("ORS").

Q. PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A. I received a Bachelor of Arts Degree in History from the University of South Carolina in Columbia in 1997. Prior to my employment with ORS, I was employed as an energy analyst with a private consulting firm. In June 2006, I joined ORS.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to set forth ORS Electric Department's findings and recommendations resulting from our review of Duke Energy Carolinas, LLC's ("Duke" or "Company") fuel expenses and power plant operations used in the generation of electricity to meet the Company's South Carolina retail customer requirements. The review period includes actual data for June 2008 through May 2009, estimated data for

1 June 2009 through September 2009, and forecasted data for October 2009 through
2 September 2010.

3 **Q. WHAT AREAS WERE ENCOMPASSED IN YOUR EXAMINATION OF THE**
4 **COMPANY'S FUEL EXPENSES AND PLANT OPERATIONS?**

5 **A.** ORS reviewed various fuel and performance related documents as part of its
6 evaluation. The information reviewed addressed energy generation and plant operation
7 activities. In preparation for this proceeding, ORS reviewed the Company's monthly fuel
8 reports including power plant performance data, unit outages, and generation statistics.
9 Comparisons and analysis of actual to original estimates were performed for both
10 megawatt-hour sales and fuel costs. ORS reviewed the Company's purchased power,
11 nuclear fuel, natural gas, coal, and transportation contracts. ORS examined the contracts
12 for reagents such as ammonia and limestone. ORS also reviewed the Company's policies
13 and procedures for fuel procurement. All information was examined with reference to
14 the Company's existing Adjustment for Fuel and Variable Environmental Costs Rider
15 and the Fuel Clause statute.

16 **Q. WHAT ADDITIONAL STEPS WERE TAKEN IN ORS'S REVIEW OF THE**
17 **COMPANY'S PROPOSAL IN THIS PROCEEDING?**

18 **A.** ORS met with various Duke personnel representing a variety of areas of expertise
19 to discuss and review Duke's fossil and nuclear fuel procurement, fuel transportation,
20 environmental reagents, emission allowances, purchasing procedures, nuclear, fossil and
21 hydro generation performance, plant dispatch, forecasting, resource planning, purchased
22 power, and general Company policies and procedures. These meetings occurred at Duke
23 Headquarters in Charlotte, N.C. In addition, on a daily basis, ORS keeps abreast of the

nuclear, coal, natural gas, and transportation industries through industry and governmental publications. During the review period, ORS also attended meetings held by the Nuclear Regulatory Commission on both the Catawba and Oconee Nuclear Stations.

Q. DID ORS EXAMINE THE COMPANY'S PLANT PERFORMANCE FOR THE REVIEW PERIOD?

A. Yes. ORS reviewed the Company's performance of its generating facilities to determine if the Company made reasonable efforts to minimize fuel costs while maximizing the availability and capacity factors of the Company's power plants. Exhibit MSH-1 shows the monthly availability of the Company's major generating units stated in percentages. The corresponding capacity factors in Exhibit MSH-2 indicate the monthly utilization of each unit in producing power.

Q. PLEASE EXPLAIN THE SIGNIFICANCE OF PLANT AVAILABILITY AND HOW IT IS USED IN ORS'S EVALUATION OF THE COMPANY'S PLANT PERFORMANCE.

A. Exhibits MSH-3 and MSH-4 show a summary of outages for the Company's major fossil and nuclear units during the review period, respectively. With reference to Exhibit MSH-1, in months where generation units show zero or less than 100% availability we examined the reasons for such occurrences. Exhibit MSH-1 through Exhibit MSH-4 should be used in concert to evaluate the Company's plant operations. As an example, Exhibit MSH-1 shows the Oconee Nuclear Unit 2 had 0.00% availability in November 2008. Exhibit MSH-4 indicates the reason for the 0.00% availability was the planned refueling and maintenance outage between October 25, 2008 and December

1 13, 2008; therefore, the unit was not available to generate electricity during this time
2 frame due to scheduled refueling and maintenance being performed.

3 **Q. WOULD YOU EXPLAIN HOW THE OTHER OUTAGES ARE REPRESENTED**
4 **ON EXHIBITS MSH-3 AND MSH-4?**

5 **A.** Yes. Exhibit MSH-3 provides explanations for major fossil unit outages of 100
6 hours or greater although our review includes all outages. While not included in this
7 Exhibit, fossil unit outages of less than 100 hours were also reviewed and found to be
8 reasonable by ORS. Exhibit MSH-4 provides explanations for all nuclear plant outages
9 during the review period.

10 **Q. PLEASE ADDRESS THE OUTAGES AT THE COMPANY'S THREE NUCLEAR**
11 **STATIONS.**

12 **A.** Exhibit MSH-4 shows the duration of the outages at the Company's three nuclear
13 stations by unit along with the explanation for the outage. ORS found that the Company
14 took appropriate corrective action with respect to these outages, and there were no
15 Nuclear Regulatory Commission fines associated with these outages. The seven nuclear
16 units combined achieved an overall 91.6% availability factor and 94.2% actual capacity
17 factor for the review period which includes scheduled refueling outages for six of the
18 seven units.

19 **Q. WHAT WERE THE RESULTS OF YOUR ANALYSIS OF THE COMPANY'S**
20 **PLANT OPERATIONS FOR THE PERIOD UNDER REVIEW?**

21 **A.** ORS's review of the Company's operation of its generating facilities resulted in
22 the conclusion that the Company made reasonable efforts to maximize unit operations
23 and minimize fuel costs.

Q. DID ORS REVIEW THE GENERATION MIX AND BASE UNIT FUEL COSTS UTILIZED BY THE COMPANY DURING THE REVIEW PERIOD?

A. Yes. Exhibit MSH-5 shows the monthly generation mix for the review period by generation type. The Company has no combined-cycle gas-fired generating units in its fleet and uses its simple-cycle combustion turbine units sparingly during peaking periods or when capacity is short and purchase opportunities are not economical. The Company's load is mainly met through comparable portions of nuclear and coal generation along with a small amount of hydro production.

In addition, Exhibit MSH-6 shows the average fuel cost in cents per kilowatt-hour and generation in megawatt-hours for each of the Company's baseload nuclear and coal-fired facilities. The McGuire Nuclear Station had the least expensive average fuel cost at 0.452 cents per kilowatt-hour. Cliffside, a coal-fired plant, had the most expensive fuel cost at 3.709 cents per kilowatt-hour. The highest total generation of 20,824,225 megawatt-hours was produced at the Oconee Nuclear Station.

Q. HAS ORS REVIEWED THE ACCURACY OF THE COMPANY'S FORECAST?

A. Yes. As shown in Exhibit MSH-7, the Company's actual megawatt-hour sales were 5.71% lower than forecasted sales during the review period. In addition, Exhibit MSH-8 shows the monthly variance between projected and actual fuel cost for the review period. This Exhibit demonstrates that the Company was able to improve its forecasted costs during eleven of the twelve months of the review period. Duke's weighted actual fuel costs were 11.01% lower than projections for the review period.

Q. DID ORS REVIEW ADDITIONAL INFORMATION IN DETERMINING THE REASONABLENESS OF THE COMPANY'S FORECAST?

1 A. Yes. ORS reviewed the forecasted maintenance schedules for the Company's
2 major generating units, the forecasted fuel price for nuclear and fossil, and the forecasted
3 price for environmental reagents. ORS also reviewed the Company's load forecasting
4 and dispatch procedures. Based on the review, ORS finds Duke's forecast to be
5 reasonable and appropriate.

6 **Q. WHAT OTHER INFORMATION HAS ORS REVIEWED IN MAKING ITS**
7 **DETERMINATIONS IN THIS PROCEEDING?**

8 A. Exhibit MSH-9 shows the ending balances of over and under collections of fuel
9 costs beginning November 1979. The Company has experienced both over-recovery and
10 under-recovery balances throughout the approximate thirty year period. The current
11 over-recovered balance as of May 2009 is \$47,830,080.

12 **Q. WHAT OTHER SOURCES OF INFORMATION DOES ORS USE IN**
13 **DETERMINING THE REASONABLENESS OF A UTILITY'S REQUEST FOR A**
14 **FUEL COST COMPONENT?**

15 A. ORS routinely: 1) reviews private and public industry publications as well as
16 those available on the Energy Information Administration's ("EIA") website; 2) conducts
17 meetings with Company personnel; 3) conducts meetings with representatives of large
18 industrial energy consumers; 4) attends industry conferences; and 5) reviews fuel
19 information as filed monthly by electric generating utilities with the Federal Government.
20 An example of EIA data reviewed is included on Exhibits MSH-10 and MSH-11.
21 Exhibit MSH-10 provides spot coal price data for a three-year period and includes the
22 most recent spike and drop in prices experienced within the last year for Central
23 Appalachia. Duke generally obtains its coal from the Central Appalachia region. Exhibit

1 MSH-11 provides uranium price data for the previous fifteen year period and shows a
2 significant increase in the price of uranium since 2006.

3 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

4 **A.** Yes, it does.

**Office of Regulatory Staff
Power Plant Performance Data Report
Availability Factors (Percentage)
Duke Energy Carolinas, LLC
Docket No. 2009-3-E**

PLANT	UNIT	MW RATING	HISTORICAL DATA			REVIEW PERIOD (ACTUAL) DATA												Average Review Pd.
			YEAR 2006	YEAR 2007	YEAR 2008	JUN 2008	JUL 2008	AUG 2008	SEP 2008	OCT 2008	NOV 2008	DEC 2008	JAN 2009	FEB 2009	MAR 2009	APR 2009	MAY 2009	
CATAWBA	1 ¹	1129	80.77	99.65	86.24	29.16	100.00	100.00	99.96	100.00	100.00	99.28	100.00	100.00	99.98	100.00	100.00	94.03
CATAWBA	2 ²	1129	87.88	82.55	99.98	100.00	100.00	99.96	100.00	100.00	99.93	100.00	100.00	100.00	19.36	36.33	100.00	87.97
MCGUIRE	1	1100	100.00	78.37	83.76	86.77	99.62	99.98	63.63	0.00	55.26	100.00	100.00	99.79	100.00	100.00	99.92	83.75
MCGUIRE	2	1100	84.77	99.99	86.75	100.00	100.00	100.00	100.00	100.00	99.94	100.00	100.00	100.00	100.00	99.97	100.00	99.99
OCONEE	1	846	78.66	97.46	82.95	93.82	100.00	99.94	100.00	100.00	99.95	100.00	99.98	100.00	100.00	99.88	99.94	99.46
OCONEE	2	846	97.61	89.72	84.22	100.00	99.97	100.00	84.86	77.32	0.00	57.03	100.00	100.00	99.96	100.00	100.00	84.93
OCONEE	3	846	89.25	85.08	99.13	99.96	100.00	100.00	100.00	100.00	89.59	100.00	100.00	99.95	99.89	79.85	21.40	90.89
NUCLEAR TOT		6996	88.42	90.40	89.00	87.10	99.94	99.98	92.64	82.47	77.81	93.76	100.00	99.96	88.46	88.00	88.75	91.57
BELEWS CREEK	1	1110	81.98	73.20	90.02	91.17	99.29	99.84	100.00	95.48	99.63	99.69	99.44	98.92	63.52	0.00	56.26	83.60
BELEWS CREEK	2	1110	84.39	91.86	86.35	85.80	83.06	98.08	87.66	100.00	100.00	99.64	86.95	76.92	76.07	89.73	88.23	89.35
CLIFFSIDE	5	562	92.52	84.50	91.62	99.90	97.91	99.98	99.68	90.53	99.78	99.94	96.41	94.20	21.25	98.51	94.96	91.09
MARSHALL	3	658	66.73	87.05	71.73	89.16	95.24	90.81	63.21	0.00	0.00	47.34	97.31	72.26	96.64	99.84	99.96	70.98
MARSHALL	4	660	68.46	91.93	82.57	93.29	99.70	93.67	89.67	65.87	74.25	79.02	98.31	99.96	93.67	32.02	90.66	84.17
FOSSIL TOTALS		4100	78.82	85.71	84.46	91.86	95.04	96.48	88.04	70.38	74.73	85.13	95.68	88.45	70.23	64.02	86.01	83.84

¹Unit 1: North Carolina Electric Membership Corp. (~61.51%) and Duke Power (~38.49%)

²Unit 2: North Carolina Municipal Power Agency No. 1 (75%) and Piedmont Municipal Power Agency (25%)

**Office of Regulatory Staff
Power Plant Performance Data Report
Capacity Factors (Percentage)
Duke Energy Carolinas, LLC
Docket No. 2009-3-E**

HISTORICAL DATA							REVIEW PERIOD (ACTUAL) DATA												
PLANT	UNIT	MW RATING	LIFE ¹ TIME	YEAR 2006	YEAR 2007	YEAR 2008	JUN 2008	JUL 2008	AUG 2008	SEP 2008	OCT 2008	NOV 2008	DEC 2008	JAN 2009	FEB 2009	MAR 2009	APR 2009	MAY 2009	Average Review Pd
CATAWBA	1 ²	1129	82.79	82.16	101.85	88.50	28.30	101.69	101.79	101.96	103.15	103.65	102.65	103.67	103.36	102.88	102.47	102.06	96.47
CATAWBA	2 ³	1129	84.19	88.78	84.44	102.89	101.45	101.99	101.87	102.38	103.09	103.43	103.60	103.79	103.19	18.47	36.42	102.67	90.20
MCGUIRE	1	1100	76.28	103.49	79.61	86.50	88.42	100.60	101.12	64.02	0.00	56.64	105.34	105.38	104.99	105.17	105.08	104.19	86.75
MCGUIRE	2	1100	83.15	87.57	103.46	90.23	103.63	102.49	102.03	102.79	104.22	104.95	105.57	105.65	105.60	105.56	105.24	104.64	104.36
OCONEE	1	846	76.03	78.62	98.78	83.80	95.03	100.53	99.57	99.81	100.75	101.61	102.30	102.43	102.41	102.32	102.07	101.84	100.89
OCONEE	2	846	78.49	99.71	91.39	85.94	102.33	101.22	100.26	84.53	78.06	0.00	58.28	104.04	104.16	103.99	103.79	103.22	86.99
OCONEE	3	846	78.24	90.78	87.20	101.93	102.97	102.01	101.03	101.19	102.30	92.09	103.17	103.60	103.63	103.45	82.53	20.88	93.24
NUCLEAR TOT		6996	79.88	90.17	92.39	91.52	87.45	101.53	101.19	93.73	83.66	82.25	98.34	104.16	103.96	90.17	90.36	93.20	94.17
BELEWS CREEK	1	1110	n/a	76.27	66.72	84.86	86.63	92.96	94.01	93.73	92.28	97.32	87.06	95.85	94.40	58.47	0.00	45.73	78.20
BELEWS CREEK	2	1110	n/a	79.29	84.45	80.10	79.00	75.42	92.33	80.24	96.46	96.96	83.89	82.40	66.97	70.53	80.43	70.29	81.24
CLIFFSIDE	5	562	n/a	71.39	71.71	78.34	92.26	83.81	85.61	85.28	74.22	87.07	62.79	80.37	46.65	17.60	74.30	63.63	71.13
MARSHALL	3	658	n/a	61.54	80.56	65.97	80.61	83.28	81.21	54.10	0.00	0.00	32.56	93.94	66.98	91.40	95.61	93.36	64.42
MARSHALL	4	660	n/a	64.72	86.77	75.77	86.95	88.99	83.88	78.71	56.50	69.59	67.82	88.88	84.25	76.87	26.01	76.56	73.75
FOSSIL TOT		4100	n/a	72.19	77.65	78.18	84.42	84.76	88.72	80.14	70.37	75.74	71.03	88.66	74.39	64.38	51.49	67.44	75.13

¹The lifetime nuclear unit capacity factors are through December 2008

²Unit 1: North Carolina Electric Membership Corp. (~61.51%) and Duke Power (~38.49%)

³Unit 2: North Carolina Municipal Power Agency No. 1 (75%) and Piedmont Municipal Power Agency (25%)

**Office of Regulatory Staff
Fossil Unit Outage Report
(100 Hrs or Greater Duration)
Duke Energy Carolinas, LLC
Docket No. 2009-3-E**

UNIT	DATE OFF	DATE ON	HOURS	TYPE	EXPLANATION OF OUTAGE
Belews Creek - 1	3/20/09	5/7/09	1,135.05	Planned	Unit was taken offline for planned Spring Outage
Belews Creek - 2	2/27/09	3/8/09	205.28	Planned	Unit was taken offline for planned Spring Outage
Cliffside - 5	2/28/09	3/20/09	478.17	Planned	Unit was taken offline for planned Spring Outage
Marshall - 3	9/20/08	12/12/08	2,012.35	Planned	Unit was taken offline for planned Fall Outage
Marshall - 3	12/14/08	12/19/08	104.32	Forced	Unit was forced offline due to a tube leak
Marshall - 4	10/24/08	10/31/08	169.33	Planned	Unit was taken offline to replace waterwall tube panels
Marshall - 4	11/21/08	11/26/08	126.42	Forced	Unit was forced offline due to a tube leak
Marshall - 4	12/16/08	12/22/08	150.63	Forced	Unit was forced offline due to a tube leak
Marshall - 4	4/10/09	5/3/09	552.80	Planned	Unit was taken offline for planned Spring Outage

Office of Regulatory Staff
Nuclear Unit Outage Report
Duke Energy Carolinas, LLC
Docket No. 2009-3-E

EXHIBIT MSH-4

UNIT	DATE OFF	DATE ON	HOURS	TYPE	EXPLANATION OF OUTAGE
Catawba - 1	5/3/2008 ¹	6/21/08	1173.57	Planned	Unit was taken offline for scheduled refueling outage and various maintenance work
Catawba - 2	3/7/09	4/19/09	1,026.44	Planned	Unit was taken offline for scheduled refueling outage and various maintenance work
McGuire - 1	6/26/08	6/30/08	82.00	Forced	Unit was forced offline due to a trip of a reactor coolant system pump
McGuire - 1	9/20/08	11/12/08	1,289.70	Planned	Unit was taken offline for scheduled refueling outage and various maintenance work
Oconee - 1	4/12/08 ²	6/2/08	1219.43	Planned	Unit was taken offline for scheduled refueling outage and various maintenance work
Oconee - 2	9/24/08	9/27/08	86.92	Forced	Unit was taken offline due to a oil leak in the main transformer
Oconee - 2	10/25/08	12/13/08	1,175.40	Planned	Unit was taken offline for scheduled refueling outage and various maintenance work
Oconee - 3	11/7/08	11/10/08	66.90	Forced	Unit was forced offline due to failure of the control rod drive processors
Oconee - 3	4/24/09	5/25/09	718.05	Planned	Unit was taken offline for scheduled refueling outage and various maintenance work

¹ Catawba - 1 began this outage prior to the review period.

² Oconee - 1 began this outage prior to the review period.

**Office of Regulatory Staff
Generation Mix Report (June 2008 – May 2009)
Duke Energy Carolinas, LLC
Docket No. 2009-3-E**

<u>MONTH</u>	<u>PERCENTAGE</u>			<u>PURCHASED POWER</u>
	<u>FOSSIL</u>	<u>NUCLEAR</u>	<u>HYDRO</u>	
2008				
June	48.2	46.7	0.0	5.1
July	42.8	52.2	0.0	5.0
August	42.8	53.5	0.0	3.7
September	41.6	53.7	0.0	4.7
October	37.2	53.5	0.0	9.3
November	41.4	50.7	0.2	7.7
December	35.8	59.0	1.4	3.8
2009				
January	39.9	56.3	1.4	2.4
February	34.5	61.8	0.0	3.7
March	36.3	61.6	2.1	0.0
April	30.6	66.0	1.7	1.7
May	30.3	62.1	1.9	5.7
Average	38.5	56.4	0.7	4.4

**Office of Regulatory Staff
Generation Statistics for Major Plants
(June 2008 – May 2009)
Duke Energy Carolinas, LLC
Docket No. 2009-3-E**

PLANT	TYPE FUEL	AVERAGE FUEL COST¹ (CENTS/KWH)	GENERATION (MWH)
McGuire	Nuclear	0.452	18,400,648
Oconee	Nuclear	0.460	20,824,225
Catawba	Nuclear	0.460	18,463,998
Marshall	Coal	2.869	12,278,627
Belews Crk	Coal	3.446	15,625,661
Allen	Coal	3.560	5,152,644
Cliffside	Coal	3.709	3,674,203
Buck	Coal/Natural Gas ²	4.025	832,042
Riverbend	Coal/Natural Gas ²	4.077	1,069,319
Lee	Coal/Natural Gas ²	4.226	632,309
Dan River	Coal/Natural Gas ²	4.250	522,904
Rockingham	Natural Gas	14.012	188,853

¹ The average fuel costs for coal-fired plants include oil and/or gas cost for start-up and flame stabilization.

² Natural gas generation constitutes a very small percentage of generation during the review period.

Office of Regulatory Staff
SC Retail Comparison of Estimated to Actual Energy Sales
Duke Energy Carolinas, LLC
Docket No. 2009-3-E

	2008	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2009	JAN	FEB	MAR	APR	MAY	TOTAL
[1] ESTIMATED SALES [MWH]		1,886,567	1,991,563	2,123,705	2,050,428	1,713,645	1,686,876	1,759,025	1,855,370	1,820,860	1,692,459	1,677,945	1,677,945	1,676,762	21,935,205
[2] ACTUAL SALES [MWH]		1,897,043	2,028,039	2,035,741	1,990,377	1,584,631	1,592,476	1,769,078	1,694,883	1,741,562	1,557,118	1,434,985	1,424,373	1,424,373	20,750,306
[3] AMOUNT DIFFERENCE [1]-[2]		-10,476	-36,476	87,964	60,051	129,014	94,400	-10,053	160,487	79,298	135,341	242,960	252,389	252,389	1,184,899
[4] PERCENT DIFFERENCE [1-2]/[2]		-0.55%	-1.80%	4.32%	3.02%	8.14%	5.93%	-0.57%	9.47%	4.55%	8.69%	16.93%	17.72%	17.72%	5.71%

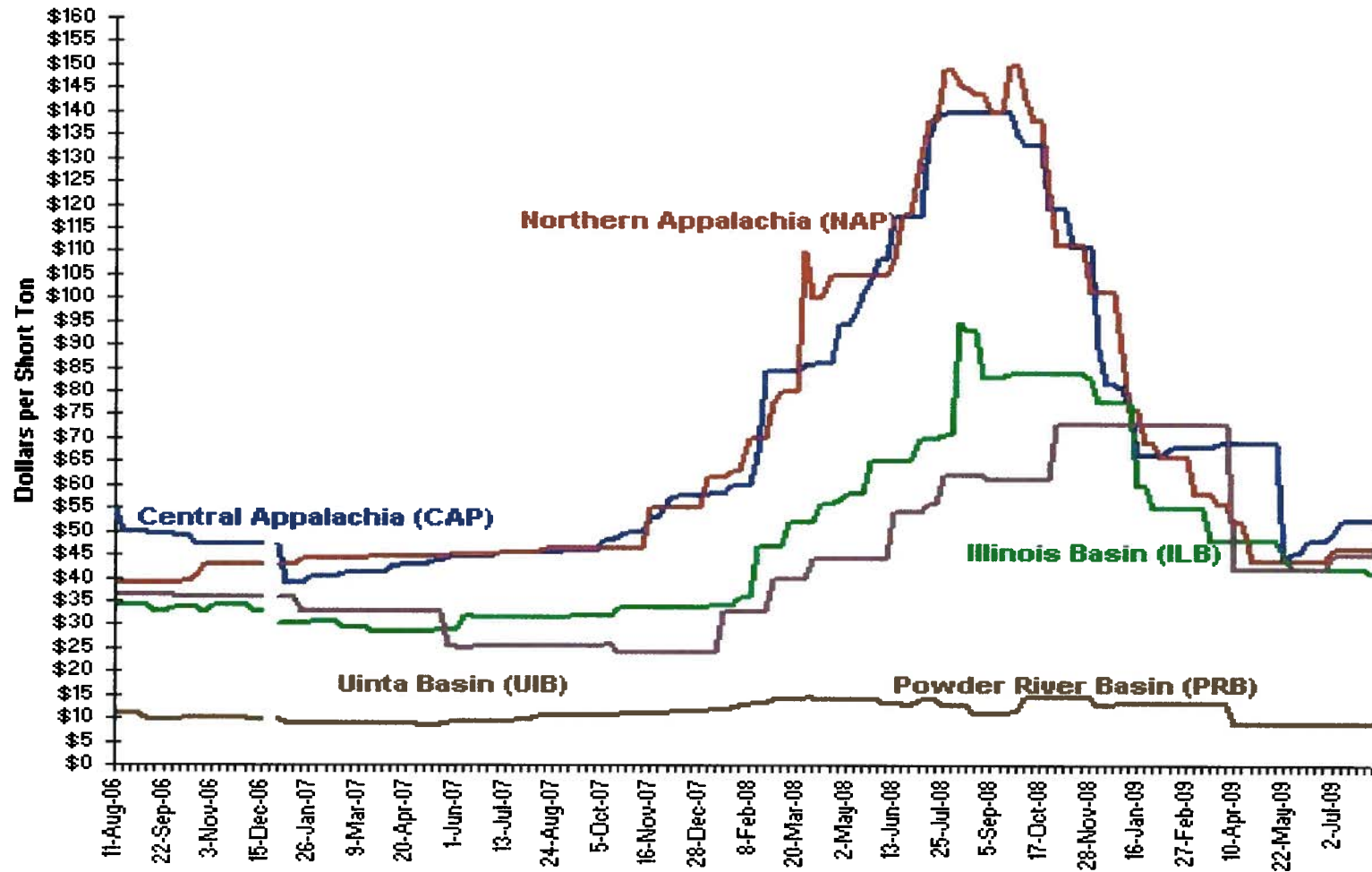
Office of Regulatory Staff
SC Retail Comparison of Estimated to Actual Fuel Cost
Duke Energy Carolinas, LLC
Docket No. 2009-3-E

	2008												2009		WEIGHTED PERIOD	
	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY				
[1] ORIGINAL PROJECTION (¢/kWh)	3.1567	2.2304	2.3325	1.8795	2.3153	2.2985	2.2173	2.1391	1.9848	1.9990	1.9287	2.3887		2.2410		
[2] ACTUAL EXPERIENCE (¢/kWh)	2.9816	2.0460	2.0672	1.7859	2.1747	2.5021	1.7732	1.9496	1.6142	1.7591	1.5919	1.8371		2.0189		
[3] AMOUNT IN BASE (¢/kWh)	1.7457	1.7457	1.7457	1.7457	2.2317	2.2317	2.2317	2.2317	2.2317	2.2317	2.2317	2.2317		2.0697		
[4] VARIANCE FROM ACTUAL [1-2]/[2]	5.87%	9.01%	12.83%	5.24%	6.47%	-8.14%	25.05%	9.72%	22.96%	13.64%	21.16%	30.03%		11.01%		

**Office of Regulatory Staff
History of Cumulative Recovery Account Report
Duke Energy Carolinas, LLC
Docket No. 2009-3-E**

<u>PERIOD ENDING</u>	<u>OVER (UNDER)\$</u>
May 1979 - Automatic Fuel Adjustment in Effect	
November-79	1,398,442
May-80	11,322,948
November-80	4,588,331
May-81	(5,760,983)
November-81	(13,061,000)
May-82	(14,533,577)
November-82	(4,314,612)
May-83	20,915,390
November-83	14,192,297
May-84	18,245,503
November-84	14,478,363
May-85	2,551,115
November-85	(553,465)
May-86	(1,318,767)
November-86	(29,609,992)
May-87	(27,241,846)
November-87	(29,329,168)
May-88	(9,373,768)
November-88	6,544,914
May-89	6,067,739
November-89	11,372,399
May-90	15,421,968
November-90	2,939,303
May-91	17,068,483
November-91	21,265,000
May-92	21,080,856
November-92	11,553,801
May-93	16,959,555
November-93	221,606
May-94	6,609,897
November-94	1,037,659
May-95	5,088,619
November-95	(377,507)
March-97	(13,299,613)
March-98	(1,956,794)
March-99	13,044,443
March-00	26,703,441
March-01	20,367,528
March-02	(7,446,417)
March-03	(1,121,094)
March-04	11,424,295
June-05	(2,669,646)
June-06	6,984,672
June-07	1,632,482
May-08	(12,225,796)
May-09	47,830,080

**EIA Average Weekly Coal Commodity Spot Prices
Business Week Ended August 7, 2009**



Key to Coal Commodities by Region¹

Central Appalachia:

Big Sandy/Kanawha 12,500 Btu, 1.2 lb SO₂/mmBtu

Northern Appalachia:

Pittsburgh Seam 13,000 Btu, <3.0 lb SO₂/mmBtu

Illinois Basin:

11,800 Btu, 5.0 lb SO₂/mmBtu

Powder River Basin:

8,800 Btu, 0.8 lb SO₂/mmBtu

Uinta Basin in Colo.:

11,700 Btu, 0.8 lb SO₂/mmBtu

EIA Weighted-Average Price of U.S. and Foreign-Origin Uranium Purchased by Owners and Operators of U.S. Civilian Nuclear Power Reactors, 1994-2008 Deliveries

